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**Federal Aviation
Administration**

AIRLINE TRANSPORT PILOT AND AIRCRAFT TYPE RATING

Practical Test Standards

for

AIRPLANE

July 2008

**FLIGHT STANDARDS SERVICE
Washington, DC 20591**

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NOTE

Material in FAA-S-8081-5F will be effective July 1, 2008. All previous editions of the Airline Transport Pilot and Aircraft Type Rating—Airplane Practical Test Standards will be obsolete as of this date.

FOREWORD

The Airline Transport Pilot and Aircraft Type Rating—Airplane Practical Test Standards (PTS) book has been published by the Federal Aviation Administration (FAA) to establish the standards for airline transport pilot and aircraft type rating practical tests for airplanes. FAA inspectors, designated pilot examiners, and check airmen (referred to as examiners throughout the remaining practical test standard) must conduct practical tests in compliance with these standards. Flight instructors and applicants should find these standards helpful in practical test preparation.

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Joseph K. Tintera, Manager
Regulatory Support Division, AFS-600
Flight Standards Service

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INTRODUCTION

General Information

The Flight Standards Service of the Federal Aviation Administration (FAA) has developed this practical test standard (PTS) to be used by examiners[1] when conducting airline transport pilot and aircraft type rating practical tests in airplanes. Instructors are expected to address all of the elements contained in this PTS when preparing applicants for practical tests. Applicants should be familiar with this PTS and refer to these standards during their training.

The FAA gratefully acknowledges the valuable assistance provided by many individuals, companies, and organizations throughout the aviation community who have contributed their time and talent in assisting with the development of this practical test standard.

This PTS may be purchased from the Superintendent of Documents, U.S. Government Printing Office (GPO), Washington, DC 20402-9325, or from GPO's web site at: http://bookstore.gpo.gov

This PTS is also available for download, in pdf format, from www.faa.gov

This PTS is published by the U.S. Department of Transportation, Federal Aviation Administration, Airman Testing Standards Branch, AFS-630, P.O. Box 25082, Oklahoma City, OK 73125.

Comments regarding this publication may be sent to the following e-mail address:

AFS630comments@faa.gov

[1] The word "examiner" denotes either the FAA inspector, FAA designated pilot examiner, or other authorized person who conducts the practical test.

Practical Test Standard Concept

Title 14 of the Code of Federal Regulations (14 CFR) part 61 specifies the areas in which knowledge and skill must be demonstrated by the applicant before the issuance of an airline transport pilot certificate and/or a type rating in airplanes. The CFRs provide the flexibility to permit the FAA to publish practical test standards containing the AREAS OF OPERATION and specific TASKs in which pilot competency must be demonstrated. Title 49 of the U.S. Code (Transportation) requires the administrator to promulgate rules and set standards in the interest of public safety.

Adherence to provisions of the regulations and the PTS is mandatory for the evaluation of airline transport pilot and type rating applicants. For some aircraft types, however, provisions of FAA Flight Standardization Board (FSB) Reports may specify special details as to how 14 CFR part 61 and this PTS apply to certain maneuvers, TASKs, procedures, or knowledge areas. FSB Reports are available from the Flight Standards Service System Safety's web site at: http://www.opspecs.com.

NOTE: Pilots employed by an air carrier certificate holder, operating under 14 CFR part 121 or 135, or as authorized by the Administrator, whose manual prohibits a circling approach when the weather is below 1,000 feet and 3 miles' visibility, are not required to be checked on the circling approach and landing from a circling approach. Aircraft type ratings added to an airline transport pilot certificate issued without training and checking in the circling maneuver, as authorized, will be annotated **"MD-11 CIRC. APCH-VMC ONLY,"** for example. This restriction may be removed when the circling approach is satisfactorily demonstrated to a designated examiner, a check airman who is a designated examiner, or an FAA inspector, in the appropriate type airplane. If, under 14 CFR part 121 or 135, or as authorized by the Administrator, the initial airline transport pilot certificate is issued coincident with a type rating, with a circling approach restriction, the airline transport pilot certificate will be annotated, **"ATP CIRC. APCH-VMC ONLY, MD-11 CIRC. APCH-VMC ONLY,"** for example. This restriction to the airline transport pilot certificate level will be removed when the first unrestricted airline transport pilot certificate or airline transport pilot type rating is issued. The respective circling approach restriction will then be annotated on the certificate, as listed in the first example.

Practical Test Book Description

This practical test book contains the Airline Transport Pilot and Aircraft Type Rating Practical Test Standards—Airplane.

The Airline Transport Pilot and Aircraft Type Rating Practical Test Standards—Airplane includes AREAS OF OPERATION and TASKs for the initial issuance of an airline transport pilot certificate and for the addition of category, class, and aircraft type ratings to an airline transport pilot certificate. These AREAS OF OPERATION and TASKs also apply for the issuance of an airplane type rating to a private or commercial pilot certificate.

The AREAS OF OPERATION are divided into two sections. The first AREA OF OPERATION in each section is conducted on the ground to determine the applicant's knowledge of the aircraft, equipment, performance, and limitations.

The eight AREAS OF OPERATION located in the second section, numbered II-IX, are considered to be the flight portion of the practical test. All eight of these AREAS OF OPERATION test the applicant's knowledge and skills.

If all TASKs of the practical test are not completed on one date, all remaining TASKs of the test must be satisfactorily completed not more than 60 calendar days after the date on which the applicant began the test.

AREAS OF OPERATION are phases of the practical test arranged in a logical sequence within each standard. They begin with Preflight Preparation and end with Postflight Procedures. The examiner may combine TASKs with similar objectives and conduct the practical test in any sequence that will result in a complete and efficient test; **however, the ground portion of the practical test must be accomplished before the flight portion.**

TASKs are titles of knowledge areas, flight procedures, or maneuvers appropriate to an AREA OF OPERATION.

REFERENCES identify the publication(s) that describe(s) the TASK. Descriptions of specific TASKs are not included in the practical test standards because this information can be found in the current issue of the listed references. Publications other than those listed may be used for references if their content conveys substantially the same meaning as the referenced publications.

This practical test standard is based on the following references:

14 CFR part 1	Definitions and Abbreviations
14 CFR parts 23/25	Airworthiness Standards
14 CFR part 61	Certification: Pilots, Flight Instructors, and Ground Instructors
14 CFR part 71	Designation of Class A, B, C, D, and E Airspace Areas; Airways; Air Traffic Service; Routes; and Reporting points
14 CFR part 91	General Operating and Flight Rules
14 CFR part 121	Operating Requirements: Domestic, flag, and Supplemental Operations
14 CFR part 135	Operating Requirements: Commuter and On Demand Operations and Rules Governing Persons on Board Such Aircraft
14 CFR part 139	Certification and Operations:
49 CFR part 830	Notification and Reporting of Aircraft Accidents or Incidents and Overdue Aircraft, and Preservation of Aircraft Wreckage, Mail, Cargo, and Records
FAA-H-8083-1	Aircraft Weight and Balance Handbook
FAA-H-8083-3	Airplane Flying Handbook
FAA-H-8083-15	Instrument Flying Handbook
FAA-H-8083-23	Seaplane, Skiplane, and Float/Ski Equipped Helicopter Operations Book
FAA-H-8083-25	Pilot's Handbook of Aeronautical Knowledge
FAA-H-8261-1	Instrument Procedures Handbook
AC 00-2	Advisory Circular Checklist
AC 00-6	Aviation Weather
AC 00-45	Aviation Weather Services
AC 20-29	Use of Aircraft Fuel Anti-icing Additives
AC 20-117	Hazards Following Ground Deicing and Ground Operations in Conditions Conducive to Aircraft Icing Aeronautical Decision Making
AC 60-22	Aeronautical Decision Making
AC 60-28	English Language Skill Standards Required by 14 CFR parts 61, 63, and 65
AC 61-84	Role of Preflight Preparation
AC 61-134	General Aviation Controlled flight into Terrain Awareness
AC 90-79	Recommended Practices and Procedures for the Use of Long-Range Navigation
AC 90-91	North American Route Program (NRP)
AC 90-94	Guidelines for Using Global Positioning System Equipment for Non Precision Instrument Approaches in the U.S. National Airspace system
AC 90-100	U.S. Terminal and En Route Area Navigation (RNAV) Operations
AC 91-43	Unreliable Airspeed Indications
AC 91-51	Effect of Icing on Aircraft Control and Airplane Deice and Anti-ice Systems

AC 91-70	Oceanic Operations
AC 91-73	Part 91 and Part 135 Single-Pilot Procedures During Taxi Operations
AC 91-74	Pilot Guide—Flight in Icing Conditions
AC 91-79	Runway Overrun Prevention
AC 120-27	Aircraft Weight and Balance Control
AC 120-28	Criteria for Approval of Category III Landing Weather Minima for Takeoff, Landing, and Rollout
AC 120-29	Criteria for Approval of Category I and Category II Weather Minima for Approach
AC 120-51	Crew Resource Management Training
AC 120-57	Surface Movement Guidance System
AC 120-60	Ground Deicing and Anti-icing Program
AC 120-62	Takeoff Safety Training Aid
AC 120-74	Parts 91, 121, 125, and 135 Flightcrew Procedures During Taxi Operations
AC 135-17	Pilot Guide—Small Aircraft Ground Deicing
AFD	Airport Facility Directory
AFM	FAA-Approved Airplane Flight Manual
AIM	Aeronautical Information Manual
CDL	Configuration Deviation List
DP	Departure Procedures
FDC NOTAM	National Flight Data Center Notices to Airmen
FSB Reports	Flight Standardization Board Reports
IAP	Instrument Approach Procedure
IFIM	International Flight Information Manual
MEL	Minimum Equipment List
NOTAM	Notices to Airmen
ODP	Obstacle Departure Procedure
Other	En Route Low and High Altitude Charts, Profile Descent Charts, Pertinent Pilot's Operating Handbooks, and Flight Manuals
SIAP	Standard Instrument Approach Procedure Charts
STAR	Standard Terminal Arrival

Note: The latest revision of these references should be used.

Objectives list the important elements that must be satisfactorily performed to demonstrate competency in a TASK. Objectives include:

1. specifically what the applicant should be able to do,
2. the conditions under which the TASK is to be performed, and
3. the acceptable standards of performance.

NOTES are used to emphasize special considerations required in the AREAS OF OPERATION or TASKs.

Abbreviations

14 CFR	Title 14 of the Code of Federal Regulations
AC	Advisory Circular
ADM	Aeronautical Decision Making
AGL	Above Ground Level
AMEL	Airplane Multiengine Land
AMES	Airplane Multiengine Sea
ATC	Air Traffic Control
CDL	Configuration Deviation List
CFIT	Controlled Flight into Terrain
CRM	Crew Resource Management
DA	Decision Altitude
DH	Decision Height
DP	Departure Procedure
FAA	Federal Aviation Administration
FAF	Final Approach Fix
FDC	Flight Data Center
FE	Flight Engineer
FMS	Flight Management System
FMSP	Flight Management System Procedures
FSB	Flight Standardization Board
FSD	Flight Simulation Device
FSDO	Flight Standards District Office
FTD	Flight Training Device
GLS	GNSS Landing System
GNSS	Global Navigation Satellite System
GPO	Government Printing Office
GPS	Global Positioning System
IAP	Instrument Approach Procedure
IFR	Instrument Flight Rules
ILS	Instrument Landing System
INS	Inertial Navigation System
LAHSO	Land and Hold Short Operations
LDA	Localizer-type Directional Aid
LOC	ILS Localizer
MDA	Minimum Descent Altitude
MEL	Minimum Equipment List
NAVAID	Navigation Aid
NDB	Non-directional Beacon
NOTAM	Notice to Airmen
NWS	National Weather Service
POH	Pilot’s Operating Handbook
PT	Procedure Turn
PTS	Practical Test Standard
RNAV	Area Navigation
SRM	Single-Pilot Resource Management
STAR	Standard Terminal Arrival
TAA	Terminal Arrival Area
V_1	Takeoff Decision Speed

V_2	Takeoff Safety Speed
VDP	Visual Descent Point
VFR	Visual Flight Rules
V_{MC}	Minimum Control Speed with Critical Engine Inoperative
VMC	Visual Meteorological Conditions
VOR	Very High Frequency Ominidirectional Range
V_R	Rotation Speed
V_{REF}	Reference Landing Approach Speed
V_{SSE}	Safe, Intentional, One-Engine Inoperative Speed
V_X	Best Angle of Climb Speed
V_Y	Best Rate of Climb Speed

Use of the Practical Test Standards

The TASKs in this PTS are for an initial airline transport pilot certificate, or the addition of a category, class, or aircraft type rating to an airline transport pilot certificate. All appropriate TASKs required for an initial type rating are also required for pilot-in-command proficiency checks conducted in accordance with 14 CFR part 61, section 61.58.

All TASKs are required, except as noted. When a particular element **is not appropriate to the aircraft or its equipment,** that element may be omitted.

If the multiengine airplane used for the flight check does not publish a V_{MC}, then the "Limited to Centerline Thrust" restriction will be added to any certificate issued from this check, unless competence in a multiengine airplane with a published V_{MC} has already been demonstrated.

Examples of element exceptions are: integrated flight systems for aircraft not so equipped, operation of landing gear in fixed gear aircraft, multiengine TASKs in single-engine aircraft, or other situations where the aircraft operation is not compatible with the requirement of the element.

If an applicant refuses to demonstrate a requested maneuver, the examiner may issue a Letter of Discontinuance to allow the examiner and applicant to discuss the applicant's concern about the requested maneuver, or a Notice of Disapproval, if the examiner determines the applicant's skill and abilities to be in serious doubt.

In preparation for each practical test, the examiner shall develop a written “plan of action” for each practical test. The “plan of action” is a tool, for the sole use of the examiner, to be used in evaluating the applicant. The plan of action need not be grammatically correct or in any formal format. The plan of action must contain all of the required AREAS OF OPERATION and TASKs and any optional TASKs selected by the examiner.

The “plan of action” shall incorporate one or more scenarios that will be used during the practical test. The examiner should try to include as many of the TASKs into the scenario portion of the test as possible, but maintain the flexibility to change due to unexpected situations as they arise and still result in an efficient and valid test. ***Any TASK selected for evaluation during a practical test shall be evaluated in its entirety.***

Note: Any equipment inoperative in accordance with a minimum equipment list (MEL) shall be placarded in accordance with the approved MEL procedures and explained by the applicant to the examiner describing the procedures accomplished, the resulting operational restrictions, and the documentation for the item(s).

Special Emphasis Areas

Examiners must place special emphasis upon areas of aircraft operations considered critical to flight safety. Among these are:

1. positive aircraft control;
2. procedures for positive exchange of flight controls;
3. stall/spin awareness;
4. special use airspace and other airspace areas;
5. collision avoidance procedures;
6. wake turbulence and low level wind shear avoidance procedures;
7. runway incursion avoidance and good cockpit discipline during taxi operations;
8. land and hold short operations (LAHSO);
9. controlled flight into terrain (CFIT);
10. aeronautical decision making (ADM)/risk management; and
11. crew resource management/single-pilot resource management (CRM/SRM) to include automation management;
12. icing condition operational hazards, anti-icing and deicing equipment, differences, and approved use and operations;
13. traffic awareness, “See and Avoid” concept.

Although these areas may not be specifically addressed under each TASK, they are essential to flight safety and will be critically evaluated during the practical test. In all instances, the applicant’s actions must relate to the complete situation.

Prior to the test, the examiner must explain, and the applicant must understand, the examiner's role regarding air traffic control (ATC), crew resource management (CRM), and the duties and responsibilities of the examiner through all phases of the practical test.

Practical Test Prerequisites: Airline Transport Pilot

An applicant for the original issuance of an airline transport pilot certificate is required (prior to the practical test) by 14 CFR part 61 to:

1. have passed the appropriate airline transport pilot knowledge test within 24 months before the date of the practical test;
2. have the aeronautical experience prescribed in 14 CFR part 61, that applies to the aircraft category and class rating;
3. have a minimum of a third-class medical certificate, if a medical certificate is required (if any portion of the certification must occur in an actual airplane, then a medical certificate is required for that portion);
4. be at least 23 years of age; and
5. be able to read, speak, write, and understand the English language. If there is any doubt, consult AC 60-28, English Language Skill Standards Required by 14 CFR parts 61, 63, and 65, or contact your local Flight Standards District Office (FSDO). The examiner must determine whether the applicant meets the English language requirements before beginning the practical test.

NOTE: The 24-month limitation does not apply if the applicant:

1. is employed as a flight crewmember by a certificate holder under 14 CFR parts 121, 125, or 135 at the time of the practical test and has satisfactorily accomplished that operator's approved—

    a. pilot in command aircraft qualification training program that is appropriate to the certificate and rating sought; and
    b. qualification training requirements appropriate to the certificate and ratings sought; or

2. is employed as a flight crewmember in U.S. military air transport operations at the time of the practical test, and has accomplished the pilot in command aircraft qualification training program that is appropriate to the certificate and rating sought.

Practical Test Prerequisites: Aircraft Type Rating

An applicant for a type rating in an airplane is required by 14 CFR part 61 to have:

1. the applicable experience;
2. a minimum of a third-class medical certificate, if a medical certificate is required (not required for simulator);
3. the appropriate category and class rating, or accomplish the appropriate TASKs in the private/commercial pilot PTSs;
4. received and logged ground training from an authorized ground or flight instructor and flight training from an authorized flight instructor, on the AREAS OF OPERATION in this practical test standard that apply to the aircraft type rating sought; and
5. received a logbook endorsement from the instructor who conducted the training, certifying that the applicant completed all the training on the AREAS OF OPERATION in this practical test standard that apply to the aircraft type rating sought.

If the applicant is an employee of a part 121 or part 135 certificate holder, the applicant may present a training record that shows the satisfactory completion of that certificate holder's approved pilot in command training program for the aircraft type rating sought, instead of the requirements of 4 and 5 above.

An applicant who holds a private pilot or limited commercial pilot certificate is required to have passed the appropriate instrument rating knowledge test since the beginning of the 24th month before the practical test is taken if the test is for the concurrent issuance of an instrument rating and an aircraft type rating.

If an applicant is taking a practical test for the issuance of a private or commercial pilot certificate with an airplane rating, in an aircraft that requires a type rating, private pilot practical test standards or commercial pilot practical test standards, as appropriate to the certificate, must be used in conjunction with this PTS. Also, the current instrument rating practical test standard must be used in conjunction with this PTS if the applicant is concurrently taking a practical test for the issuance of an instrument rating and a type rating. The TASKs that are in the private pilot, commercial pilot, or instrument rating PTS (and not listed in this PTS) must be accomplished.

An amphibian type rating must bear the limitation “LIMITED TO LAND” or “LIMITED TO SEA,” as appropriate, unless the applicant demonstrates proficiency in both land and sea operations.

Aircraft Type Ratings Limited to "VFR ONLY"

Pilot applicants who wish to add a type rating, limited to VFR, to their certificate must take a practical test that includes the following items, as listed on pages 1-i, 2-i, and 2-ii of this document.

Section 1: PREFLIGHT PREPARATION

I. AREA OF OPERATION: PREFLIGHT PREPARATION

A. TASK: Equipment Examination
B. TASK: Performance and Limitations

Section 2: PREFLIGHT PROCEDURES, INFLIGHT MANEUVERS, AND POSTFLIGHT PROCEDURES

II. AREA OF OPERATION: PREFLIGHT PROCEDURES

A. TASK: Preflight Inspection
B. TASK: Powerplant Start
C. TASK: Taxiing
F. TASK: Pre-takeoff Checks

III. AREA OF OPERATION: TAKEOFF AND DEPARTURE PHASE

A. TASK: Normal and Crosswind Takeoff
F. TASK: Powerplant Failure During Takeoff
G. TASK: Rejected Takeoff

IV. AREA OF OPERATION: INFLIGHT MANEUVERS

A. TASK: Steep Turns
B. TASK: Approaches to Stalls
C. TASK: Powerplant Failure—Multiengine Airplane
D. TASK: Powerplant Failure—Single-engine Airplane
E. TASK: Specific Flight Characteristics

V. AREA OF OPERATION: INSTRUMENT PROCEDURES—NOT APPLICABLE

VI. AREA OF OPERATION: LANDINGS AND APPROACHES TO LANDINGS

A. TASK: Normal and Crosswind Approaches and Landings
C. TASK: Approach and Landing with (Simulated) Powerplant Failure—Multiengine Airplane
H. TASK: Rejected Landing
I. TASK: Landing from a No Flap or a Nonstandard Flap Approach

VII. AREA OF OPERATION: NORMAL AND ABNORMAL PROCEDURES

A. TASK: Normal and Abnormal Procedures

VIII. AREA OF OPERATION: EMERGENCY PROCEDURES

A. TASK: Emergency Procedures

IX. AREA OF OPERATION: POSTFLIGHT PROCEDURES—ALL TASKS AS APPLICABLE

Removal of the "Limited to Center Thrust" Limitation

The removal of the "Limited to Center Thrust" limitation at the airline transport pilot certificate level requires an applicant to satisfactorily perform the following AREAS OF OPERATION and TASKs from FAA-S-8081-5,(as amended) Airline Transport Pilot and Aircraft Type Rating Practical Test Standards—Airplane and the following AREAS OF OPERATION and TASKs from FAA-S-8081-12 (as amended), Commercial Pilot Practical Test Standards—Airplane during the practical test in a multiengine airplane that has a manufacturer's published V_{MC} speed. From FAA-S-8081-5, Airline Transport Pilot and Aircraft Type Rating Practical Test Standards—Airplane:

III. AREA OF OPERATION: TAKEOFF AND DEPARTURE PHASE

F. TASK: Powerplant Failure During Takeoff
G. TASK: Rejected Takeoff

IV. AREA OF OPERATION: INFLIGHT MANEUVERS

C. TASK: Powerplant Failure—Multiengine Airplane

VI. AREA OF OPERATION: LANDINGS AND APPROACHES TO LANDINGS

C. TASK: Approach and Landing with (Simulated) Powerplant Failure—Multiengine Airplane

From FAA-S-8081-12, Commercial Pilot Practical Test Standards—Airplane: Section II Commercial Pilot Airplane—Multiengine Land and Multiengine Sea:

I. AREA OF OPERATION: PREFLIGHT PREPARATION

H. TASK: Principles of Flight—Engine Inoperative

X. AREA OF OPERATION: MULTIENGINE OPERATIONS

A. TASK: Maneuvering with One Engine Inoperative
B. TASK: V_{MC} Demonstration

NOTE: A flight simulator or flight training device representative of a multiengine airplane, with a manufacturer's published V_{MC} speed, may be used if used in accordance with a program approved for a 14 CFR part 142 certificate holder.

Aircraft and Equipment Required for the Practical Test

If the practical test is conducted in an aircraft, the applicant is required by 14 CFR part 61 to provide an appropriate and airworthy aircraft for use during the practical test. Its operating limitations must not prohibit the TASKs required on the practical test. Multiengine certification flight checks require normal engine shutdowns and restarts in the air to include propeller feathering and unfeathering. The AFM must not prohibit these procedures. (Low power settings for cooling periods prior to the actual shutdown are acceptable and encouraged as the AFM states.) The exception is for type ratings when that particular airplane was not certificated with inflight unfeathering capability. For those airplanes ONLY, simulated powerplant failures will suffice.

Flight instruments are those required for controlling the aircraft without outside references. The required radio equipment is that which is necessary for communications with ATC, and for the performance of instrument approach procedures. GPS equipment must be instrument certified and contain the current database.

If the practical test is conducted in an aircraft, the applicant is required to provide an appropriate view limiting device that is acceptable to the examiner. The device must be used during all testing that requires testing "solely by reference to instruments." This device must prevent the applicant from having visual reference outside the aircraft, but not prevent the examiner from having visual reference outside the aircraft. A procedure should be established between the applicant and the examiner as to when and how this device should be donned and removed and this procedure briefed before the flight.

The applicant is expected to demonstrate automation management skills in utilizing the autopilot, avionics and systems displays, and/or flight management system (FMS), as applicable to installed equipment, during the practical test to assist in the management of the aircraft. The examiner is expected to test the applicant's knowledge of the systems that are installed and operative during the oral and flight portions of the practical test.

If the practical test is conducted in the aircraft and the aircraft has an operable and properly installed GPS, the applicant must demonstrate GPS approach proficiency. If the applicant has contracted for training in

an approved course that includes GPS training, and the airplane/ simulator/FTD has a properly installed and operable GPS, the applicant must demonstrate GPS approach proficiency. When a practical test is conducted for a 14 CFR part 121/135 operator, the operator's approved training program is controlling.

NOTE: The applicant must perform the tasks, except for water operations, in actual or simulated instrument conditions unless the practical test cannot be accomplished under instrument flight rules because the aircraft's type certificate makes the aircraft incapable of operating under instrument flight rules.

Use of an FAA-Approved Flight Simulator or Flight Training Device

In the AREA OF OPERATION labeled "PREFLIGHT PREPARATION," the TASKs are knowledge only. These TASKs do not require the use of a flight training device (FTD), flight simulator, or an aircraft to accomplish, but they may be used.

Each inflight maneuver or procedure must be performed by the applicant in an FTD, flight simulator, or an aircraft. Appendix 1 of this practical test standard should be consulted to identify the maneuvers or procedures that may be accomplished in an FTD or flight simulator. The level of FTD or flight simulator required for each maneuver or procedure is also found in appendix 1.

When accomplished in an aircraft, certain TASK elements may be accomplished through "simulated" actions in the interest of safety and practicality, but when accomplished in an FTD or flight simulator, these same actions would not be "simulated." For example, when in an aircraft, a simulated engine fire may be addressed by retarding the throttle to idle, simulating the shutdown of the engine, simulating the discharge of the fire suppression agent, and simulating the disconnection of associated electrics, hydraulics, pneumatics, etc.

However, when the same emergency condition is addressed in an FTD or a flight simulator, all TASK elements must be accomplished as would be expected under actual circumstances. Similarly, safety of flight precautions taken in the aircraft for the accomplishment of a specific maneuver or procedure (such as limiting the altitude in an approach to stall, or setting maximum airspeed for a rejected takeoff) need not be taken when an FTD or a flight simulator is used.

It is important to understand that whether accomplished in an FTD, a flight simulator, or the aircraft, all TASKs and TASK elements for each maneuver or procedure will have the same performance criteria applied for determination of overall satisfactory performance.

Examiner Responsibility

The examiner who conducts the practical test is responsible for determining that the applicant meets the standards outlined in the Objective of each TASK within the AREAS OF OPERATION in the practical test standard. The examiner must meet this responsibility by determining that the applicant's knowledge and skill meet the Objective in all required TASKs.

The equipment examination in Section 1 must be closely coordinated and related to the flight portion of the practical test in Section 2, but must not be given during the flight portion of the practical test. The equipment examination should be administered prior (it may be the same day) to the flight portion of the practical test. The examiner may accept written evidence of the equipment exam if the exam is approved by the Administrator and administered by an individual authorized by the Administrator. The examiner must use whatever means deemed suitable to determine that the applicant's equipment knowledge meets the standard.

The AREAS OF OPERATION in Section 2 contain TASKs, which include both “knowledge” and “skill” elements. The examiner must ask the applicant to perform the skill elements. Knowledge elements not evident in the demonstrated skills may be tested by questioning, at anytime, during the flight event. Questioning inflight should be used judiciously so that safety is not jeopardized. Questions may be deferred until after the flight portion of the test is completed.

For aircraft requiring only one pilot, the examiner may not assist the applicant in the management of the aircraft, radio communications, tuning and identifying navigational equipment, or using navigation charts. If the examiner, other than an FAA Inspector, is qualified and current in the specific make and model aircraft that is certified for two or more crewmembers, he or she may occupy a duty position.

If the examiner occupies a duty position on an aircraft that requires two or more crewmembers, the examiner must fulfill the duties of that position. Moreover, when occupying a required duty position, the examiner must perform crew resource management (CRM) functions as briefed and requested by the applicant except during the accomplishment of steep turns and approach to stalls. During these two TASKs the applicant must demonstrate their ability to control the aircraft without the intervention from the non flying pilot.

SAFETY OF FLIGHT must be the prime consideration at all times. The examiner, applicant, and crew must be constantly alert for other traffic.

Satisfactory Performance

The ability of an applicant to safely perform the required TASKs is based on:

1. performing the TASKs specified in the AREAS OF OPERATION for the certificate or rating sought within the approved standards;
2. demonstrating mastery of the aircraft with the successful outcome of each TASK performed never seriously in doubt (14 CFR section 61.43(a)(2));
3. demonstrating satisfactory proficiency and competency within the approved standards and single-pilot competence if the aircraft is type certificated for single-pilot operations; and
4. demonstrating sound judgment and single-pilot resource management/crew resource management.

“Knowledge” means the applicant can describe in general or specific terms a response to the examiner’s question.

“Satisfactory knowledge” means the applicant’s answer contains at least 70 percent of the reference answer to the examiner’s question (“textbook answer”) and if the applicant’s actions followed his/her response, the safety of the airplane would never be seriously in doubt.

Unsatisfactory Performance

The tolerances represent the performance expected in good flying conditions. If, in the judgment of the examiner, the applicant does not meet the standards of performance of any TASK performed, the associated AREA OF OPERATION is failed and therefore, the practical test is failed.

NOTE: The tolerances stated in this standard are intended to be used as a measurement of the applicant’s ability to operate in the instrument environment. They provide guidance for examiners to use in judging the applicant’s qualifications. The regulations governing the tolerances for operation under Instrument Flight Rules are established in 14 CFR part 91.

The examiner or applicant may discontinue the test at any time when the failure of an AREA OF OPERATION makes the applicant ineligible for the certificate or rating sought. ***The test may be continued ONLY with the consent of the applicant.*** If the test is discontinued, the applicant is entitled credit for only those AREAS OF OPERATION and their associated TASKs satisfactorily performed. However, during the retest, and at the discretion of the examiner, any TASK may be reevaluated, including those previously passed.

Typical areas of unsatisfactory performance and grounds for disqualification are:

1. Any action or lack of action by the applicant that requires corrective intervention by the examiner to maintain safe flight.
2. Failure to use proper and effective visual scanning techniques, when applicable, to clear the area before and while performing maneuvers.
3. Consistently exceeding tolerances stated in the Objectives.
4. Failure to take prompt corrective action when tolerances are exceeded.

When a Notice of Disapproval is issued, the examiner shall record the applicant's unsatisfactory performance in terms of the AREA OF OPERATION and specific TASK(s) not meeting the standard appropriate to the practical test conducted. The AREA(s) OF OPERATION/ TASK(s) not tested and the number of practical test failures shall also be recorded. If the applicant fails the practical test because of a special emphasis area, the Notice of Disapproval shall indicate the associated TASK. For example, AREA OF OPERATION VI, TASK D, Landing From a Circling Approach, failure to avoid runway incursion.

Letter of Discontinuance

When a practical test is discontinued for reasons other than unsatisfactory performance (i.e., equipment failure, weather, illness), The FAA Form 8710-1, Airman Certificate and/or Rating Application, and, if applicable, the Airman Knowledge Test Report, is returned to the applicant. The examiner then must prepare, sign, and issue a Letter of Discontinuance to the applicant. The Letter of Discontinuance must identify the AREAS OF OPERATION and their associated TASKs of the practical test that were successfully completed. The applicant must be advised that the Letter of Discontinuance must be presented to the examiner, to receive credit for the items successfully completed, when the practical test is resumed, and made part of the certification file.

Aeronautical Decision Making (ADM) and Risk Management

The examiner must evaluate the applicant's ability throughout the practical test to use good aeronautical decision making procedures in order to evaluate risks. The examiner must accomplish this requirement by developing scenarios that incorporate as many TASKs as possible to evaluate the applicant's risk management in making safe aeronautical decisions. For example, the examiner may develop a scenario that incorporates weather decisions and performance planning. Information may be found in AC 60-22, Aeronautical Decision Making, and many other resources as well.

Crew Resource Management (CRM and Single Pilot Resource Management (SRM))

CRM/SRM "…refers to the effective use of all available resources: human resources, hardware, and information. Other groups routinely working with the cockpit crew (or single pilot) who are involved in decisions required to operate a flight safely are also essential participants in an effective CRM process. These groups include, but are not limited to: dispatchers, flight attendants, maintenance personnel, flight operations managers, management, pilot examiners, check airmen, flight standards officers, and air traffic controllers." CRM/SRM is not a single TASK. CRM/SRM is a set of competencies, which must be evident in all TASKs in this practical test standard, as applied to the single-pilot or the multicrew operation. CRM focuses on situational awareness, communication skills, teamwork, task allocation, and decision making within a comprehensive framework of standard operating procedures (SOP). SRM is the management of all resources onboard the aircraft and available from outside resources to the single pilot.

CRM/SRM deficiencies almost always contribute to the unsatisfactory performance of a TASK. For debriefing purposes, an amplified list of CRM competencies, expressed as behavioral markers, may be found in AC 120-51, as amended, Crew Resource Management Training. These markers consider the use of various levels of automation in flight management systems.

CRM/SRM evaluations are still largely subjective. Certain CRM competencies are well-suited to objective evaluation. These are the CRM-related practices set forth in the aircraft manufacturer's or the operator's FAA-approved operating or training manuals as explicit, required procedures. The CRM procedures may be associated with one or more TASKs in these practical test standards. Examples include required briefings, radio calls, and instrument approach callouts. The evaluator simply observes that the individual complies (or fails to comply) with requirements.

How the Examiner Evaluates CRM/SRM

Examiners are required to exercise proper CRM/SRM competencies in conducting tests, as well as expecting the same from applicants.

Pass/Fail judgments based solely on CRM/SRM issues must be carefully chosen since they may be entirely subjective. Those Pass/Fail judgments, which are not subjective, apply to CRM-related procedures in FAA-approved operations manuals that must be accomplished, such as briefings to other crewmembers. In such cases, the operator (or the aircraft manufacturer) specifies what should be briefed and when the briefings should occur.

The examiner may judge objectively whether the briefings should occur. The examiner may judge objectively whether the briefing requirement was or was not met. In those cases where the operator (or aircraft manufacturer) has not specified a briefing, the examiner shall require the applicant to brief the appropriate items from the following note. The examiner may then judge objectively whether the briefing requirement was or was not met.

NOTE: The majority of aviation accidents and incidents are due to resource management failures by the pilot/crew; fewer are due to technical failures. Each applicant must give a **crew briefing** before each **takeoff/departure** and **approach/landing**. If the operator or aircraft manufacturer has not specified a briefing, the briefing must cover the appropriate items, such as: **departure runway, DP/STAR/ IAP, power settings, speeds, abnormal or emergency procedures prior to or after reaching decision speed (i.e., V_1 or V_{MC}), emergency return intentions, missed approach procedures, FAF, altitude at FAF, initial rate of descent, DA/DH/MDA, time to missed approach, and what is expected of the other crewmembers during the takeoff/DP and approach/landing.** If the first takeoff/departure and approach/landing briefings are satisfactory, the examiner may allow the applicant to brief only the changes, during the remainder of the flight.

Applicant's Use of Checklists

Throughout the practical test, the applicant is evaluated on the use of an appropriate checklist. In crew served airplanes, the applicant as PIC (acting) should coordinate all checklists with the crew to ensure all items are accomplished in a timely manner. The applicant as acting PIC should manage the flight to include crew checklist performance, requiring standard callouts, announcing intentions, and initiating checklist procedures. If the airplane is a single-pilot airplane, the applicant should demonstrate CRM principles described as single pilot resource management (SRM). Proper use is dependent on the specific TASK being evaluated. The situation may be such that the use of the checklist, while accomplishing elements of an Objective, would be either unsafe or impractical, especially in a single-pilot operation. In this case, a review of the checklist after the elements have been accomplished would be appropriate. Use of a checklist should also consider visual scanning and division of attention at all times.

Use of Distractions During Practical Tests

Numerous studies indicate that many accidents have occurred when the pilot has been distracted during critical phases of flight. To evaluate the pilot's ability and situational awareness to utilize proper control technique while dividing attention both inside and outside the cockpit, the examiner must cause a realistic distraction during the flight portion

of the practical test to evaluate the applicant's ability to divide attention while maintaining safe flight.

Positive Exchange of Flight Controls

During the flight, there must always be a clear understanding between the pilots of who has control of the aircraft. Prior to flight, a briefing should be conducted that includes the procedure for the exchange of flight controls. Some operators have established a two-step procedure for exchange of flight controls. A popular three-step process in the exchange of flight controls between the pilots is explained below. Any safe procedure agreed to by the applicant and the examiner is acceptable.

When one pilot wishes to give the other pilot control of the aircraft, he or she will say, "You have the flight controls." The other pilot acknowledges immediately by saying, "I have the flight controls." The first pilot again says, "You have the flight controls." When control is returned to the first pilot, follow the same procedure. A visual check is recommended to verify that the exchange has occurred. There should never be any doubt as to who is flying the aircraft.